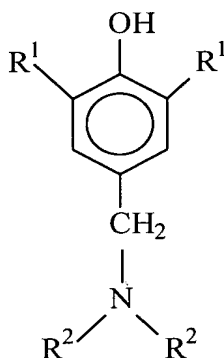


## CLAIMS

What is claimed is:

1. A stabilized high-vinyl polybutadiene composition comprising:  
a high-vinyl polybutadiene, and  
an antioxidant defined by the formula



where each R<sup>1</sup> and R<sup>2</sup>, which may be the same or different, are mono-valent organic groups, or where each R<sup>1</sup>, which may be the same or different, is a mono-valent organic group and the two R<sup>2</sup> groups join to form a divalent organic group.

2. The composition of claim 1, where the antioxidant is present in an amount from about 0.1 to about 10 parts by weight per 100 parts by weight of the high-vinyl polybutadiene.

3. The composition of claim 1, where the high-vinyl polybutadiene is syndiotactic 1,2-polybutadiene.

4. The composition of claim 1, where the antioxidant is 2,6-di-*t*-butyl-4-(dimethylaminomethyl)phenol, 2,6-di-*t*-butyl-4-(diethylaminomethyl)phenol, 2,6-di-*t*-butyl-4-(dibutylaminomethyl)phenol, 2,6-di-*t*-butyl-4-(diphenylaminomethyl)phenol, 2,6-di-*t*-butyl-4-(di-*t*-butylaminomethyl)phenol, 2,6-di-*t*-butyl-4-(dineopentylaminomethyl)phenol, 2,6-di-*t*-butyl-4-(diisopropylaminomethyl)phenol, 2,6-diethyl-4-(dimethylaminomethyl)phenol, 2,6-dimethyl-4-(dimethylaminomethyl)phenol,

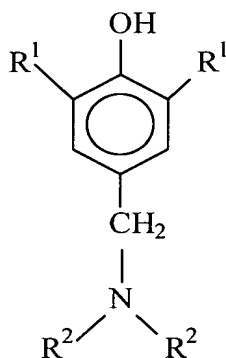
2,6-dipropyl-4-(dimethylaminomethyl)phenol, 2,6-isopropyl-4-(dimethylaminomethyl)phenol, 2,6-diphenyl-4-(dimethylaminomethyl)phenol, 2,6-dineopentyl-4-(dimethylaminomethyl)phenol, or mixtures thereof.

5 5. The composition of claim 4, where said antioxidant is 2,6-di-*t*-butyl-4-(dimethylaminomethyl)phenol.

6. A method of stabilizing high-vinyl polybutadiene from thermal crosslinking, the method comprising:

10 providing a composition of matter comprising high-vinyl polybutadiene; and

adding to the composition an antioxidant defined by the formula



where each R<sup>1</sup> and R<sup>2</sup>, which may be the same or different, are mono-valent organic groups, or where each R<sup>1</sup>, which may be the same or different, is a mono-valent organic group and the two R<sup>2</sup> groups join to form a divalent organic group, thereby forming a mixture of high-vinyl polybutadiene and antioxidant.

20 7. The method of claim 6, where the antioxidant is 2,6-di-*t*-butyl-4-(dimethylaminomethyl)phenol.

8. The method of claim 6, where the composition of matter comprising high-vinyl polybutadiene includes a solvent that forms a cement with the high-vinyl polybutadiene; and the method further comprising the step of isolating

the mixture of high-vinyl polybutadiene and the antioxidant from the solvent after said step of adding the antioxidant.

9. The method of claim 6, further comprising the step of adding tris(nonylphenyl) phosphite to the composition of matter comprising high-vinyl polybutadiene.

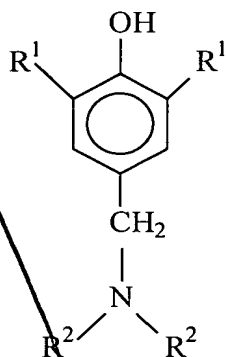
10. The method of claim 6, where said step of adding the antioxidant includes adding from about 0.1 to about 10 parts by weight of the antioxidant per 100 parts by weight of the high-vinyl polybutadiene.

11. The method of claim 6, where said high-vinyl polybutadiene is syndiotactic 1,2-polybutadiene.

12. A method of preparing a vulcanizable composition of matter, the method comprising:

providing a composition of matter comprising high-vinyl polybutadiene;

adding to the high-vinyl polybutadiene composition an antioxidant defined by the formula



where each R<sup>1</sup> and each R<sup>2</sup>, which may be the same or different, are mono-valent organic groups, or where each R<sup>1</sup>, which may be the same or different, is a mono-valent organic group and the two R<sup>2</sup> groups join

to form a divalent organic group, thereby forming a mixture of high-vinyl polybutadiene and antioxidant;

providing a rubber; and

compounding the rubber with the mixture of the high-vinyl polybutadiene and antioxidant.

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13. The method of claim 12, where the composition of matter comprising high-vinyl polybutadiene includes a solvent that forms a cement with the high-vinyl polybutadiene; and the method further comprising the step of isolating the mixture of high-vinyl polybutadiene and the antioxidant from the solvent after said step of adding the antioxidant.

14. The method of claim 12, where said antioxidant is 2,6-di-*t*-butyl-4-(dimethylaminomethyl)phenol.

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15. The method of claim 13, where said step of isolating includes direct drum drying at temperatures in excess of 100°C.

16. The method of claim 13, where said step of isolating includes steam desolventizing the cement and drying the mixture of high-vinyl polybutadiene and antioxidant at a temperature in excess of 100°C.

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17. The method of claim 12, further comprising the step of adding tris(nonylphenyl) phosphite to the composition of matter comprising high-vinyl polybutadiene.

18. The method of claim 12, where said step of adding the antioxidant includes adding from about 0.1 to about 10 parts by weight of the antioxidant per 100 parts by weight of the high-vinyl polybutadiene.

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19. The method of claim 12, where said step of compounding includes mixing the rubber and mixture of high-vinyl polybutadiene and antioxidant at a temperature in excess of 100°C.

5 20. The method of claim 12, where said high-vinyl polybutadiene is syndiotactic 1,2-polybutadiene.

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